U.S. Geological Survey, recent and ongoing projects in the Williston Basin. July 2013.

	Year	Project Title	USGS contact(s)	Published paper, data source, on-going study, etc.	Link	Relevant information	Keywords
1	2003-present	Delineation of brine contamination in and near the East Poplar oil field, Fort Peck Indian Reservation, northeastern Montana	•Joanna Thamke, Montana Water Science Center •Zell Peterman, Crustal Geophysics and Geochemistry Center •Bruce Smith, Crustal Geophysics and Geochemistry Center •Todd Preston, Northern Rocky Mountain Science Center	USGS WRIR 2003-4214; USGS OFR 2006-1216; USGS OFR 2010-1326	http://mt.water.usgs.gov/projects/east_poplar/index.html	Project assesses brine contamination to the shallow aquifers and surface water.	Energy Development, Williston Basin, Brine contamination, Groundwater, Surface Water, East Poplar oil field, Fort Peck Indian Reservation
2	2008-present	Brine Contamination to Prairie Potholes from Energy Development in the Williston Basin	•Robert Gleason, Northern Prairie Wildlife Research Center •Joanna Thamke, Montana Water Science Center •Brian Tangen, Northern Prairie Wildlife Research Center •Todd Preston, Northern Rocky Mountain Science Center •Tara Chesley-Preston, Northern Rocky Mountain Science Center •Bruce Smith, Crustal Geophysics and Geochemistry Center	USGS FS 2011-3047; Applied Geochemistry August 24, 2012; USGS OFR 2012-1149; Montana State University Thesis 2011	http://steppe.cr.usgs.gov/ http://pubs.usgs.gov/of/2012/1149/	Water-quality impacts of brine spills, spatial data on wells, decision analysis findings	Energy Development, Williston Basin, Brine Contamination, Prairie Potholes, Wetlands, Groundwater
3	2010-present	Water Balances for Energy Resource Production	•Seth Haines, Central Energy Resources Science Center •Joanna Thamke, Montana Water Science Center	On-going study	http://energy.usgs.gov/HealthEnvironment/EnergyProductionUse/ProducedWaters.aspx	Water availability	Energy Development, Williston Basin, Groundwater, Surface Water
4	2011-2012	A GIS-Based Vulnerability Assessment of Brine Contamination to Aquatic Resources from Oil and Gas Development in Eastern Sheridan County, MT	•Todd M. Preston, Northern Rocky Mountain Science Center •Tara L. Chesley-Preston, Northern Rocky Mountain Science Center •Joanna N. Thamke, Montana Water Science Center	publication in preparation	http://steppe.cr.usgs.gov/pdf/AWRA_2012_poster_Final.pdf	Vulnerability assessment methods	Energy Development, Williston Basin, Brine Contamination, Vulnerability Assessment
5	2012-2015	Williston and Powder River basins groundwater availability	•Joanna N. Thamke, Montana Water Science Center •Andrew Long, South Dakota Water Science Center •Gary LeCain, Office of Groundwater •Derek Ryter, Oklahoma Water Science Center •Tim Bartos, Wyoming Water Science Center	publications in preparation	http://mt.water.usgs.gov/projects/WaPR/	Groundwater availability determined for current and projected energy development	Energy Development, Williston Basin, Powder River Basin, Groundwater Availability
6	2012-present	Investigating the biological impacts of brine contamination on wetlands of the Prairie Pothole Region: Developing maps depicting conditions in the ecosystems	•Todd M. Preston, Northern Rocky Mountain Science Center •Tara L. Chesley-Preston, Northern Rocky Mountain Science Center	On-going study		Biological impacts of brine contamination	Energy Development, Williston Basin, Brine Contamination, Biological Impacts, Prairie Potholes, Wetlands
7	2012-present	Spatial characterization of wetland surface water contamination risk from oil development in the Prairie Pothole Region of North Dakota	•Max Post van der Burg, Northern Prairie Wildlife Research Center •Brian Tangen, Northern Prairie Wildlife Research Center •Robert Gleason, Northern Prairie Wildlife Research Center •Jill Frankforter, Montana Water Science Center	On-going study		Impacts of brines on wetland surface water chemistry	Energy Development, Williston Basin, Brine Contamination, Prairie Potholes, Wetlands
8	2012-present	Baseline Chemical and Isotopic Data for Produced Water from the Bakken Formation, Williston Basin	•Zell Peterman, Crustal Geophysics and Geochemistry Science Center •Rod Caldwell, Montana Water Science Center •Joel Galloway, North Dakota Water Science Center	On-going study		Characterize Bakken Formation water	Energy Development, Williston Basin, Bakken Formation, Strontium Isotopes
9	2012-2015	Effects of oil and gas development on grassland birds	•Doug Johnson, Northern Prairie Wildlife Research Center	On-going study		Biological impacts of energy development	Grassland birds, Oil and gas development
10	2013-2014	Presence and Abundance of Invasive Species and Non-Native Perennial Grasses Related to Energy Development in Montana and North Dakota	•Todd M. Preston, Northern Rocky Mountain Science Center •Rick Sojda, Northern Rocky Mountain Science Center •Tara L. Chesley-Preston, Northern Rocky Mountain Science Center	On-going study		The effects of energy development on the presence and abundance of noxious weeds	Energy Development, Williston Basin, Invasive Species, Noxious Weeds
11	2013	Comprehensive Wetland Assessment and Monitoring Program within the Lostwood Complex of Northeast Montana and Northwest North Dakota	•Todd M. Preston, Northern Rocky Mountain Science Center •Rick Sojda, Northern Rocky Mountain Science Center •Tara L. Chesley-Preston, Northern Rocky Mountain Science Center	On-going study		Use previously determined vulnerability assessment methods for Waterfowl Production Areas in the Lostwood National Wildlife Refuge Complex	Energy Development, Williston Basin, Waterfowl Production Areas, Brine Contamination, Vulnerability Assessment
12	2013	Williston Basin Baseline Water-Quality Assessment	•Peter McMahon, Colorado Water Science Center •Jill Frankforter, Montana Water Science Center •Joel Galloway, North Dakota Water Science Center; Kyle Davis, South Dakota Water Science Center	On-going study		Characterize baseline water-quality conditions in the Upper Fort Union aquifer within the Williston Basin, Montana and North Dakota	Energy Development, Williston Basin, Water Quality, Baseline
13	2013	Isotopic Indications of Fluid Flow in the Bakken Formation, Williston Basin	•Zell Peterman, Crustal Geophysics and Geochemistry Science Center •Stephanie Gaswirth, Energy Assessment Program	On-going study			
14	2013	Landscape Change, Ecological Impacts, and DOI Information needs Associated with Energy Production in the Williston Basin, Northern Great Plains	•Robert Gleason, Northern Prairie Wildlife Research Center •Brian Tangen, Northern Prairie Wildlife Research Center •Gregg Wiche, North Dakota Water Science Center •Greg Delzer, South Dakota Water Science Center •Joanna Thamke, Montana Water Science Center	On-going study		Conceptualized model of 'life cycle' of water used in tight-oil production and development via hydraulic fracturing	Energy Development, Williston Basin, Water Quality, Bakken Formation, Hydraulic Fracturing
15	2013-2014	Analyses of water-quality data and resources on the Fort Berthold Reservation, North Dakota	•Tony Ranalli, Colorado Water Science Center, •Robert Lundgren, North Dakota Water Science Center	On-going study		Analyses of water-quality data and resources on the Fort Berthold Reservation, North Dakota	Water-quality, groundwater, streams, springs, lakes, Fort Berthold Reservation, North Dakota